

Sea Turtle Nest Survey of Hutchinson Island, Florida

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EACH summer a considerable number of sea turtles come ashore on the beach of Hutchinson Island, near Stuart, Florida, to lay their eggs (Fig. 1). The bulk of the nesting population consists of loggerhead turtles, *Caretta caretta caretta* (Linne); how-



Fig. 1. A loggerhead turtle nest.

ever, a few green turtles, *Chelonia mydas mydas* (Linne), have also been reported as nesting here.

Raccoons frequently dig up the nests and local residents have estimated that between 50 and 75 per cent are destroyed. This study was undertaken to obtain an estimate of the total number of nests and eggs and also the extent of nest damage by predation.

METHODS AND MATERIALS

Three one-mile stretches of beach were designated as study areas (Fig. 2) and were checked during the day on Monday,

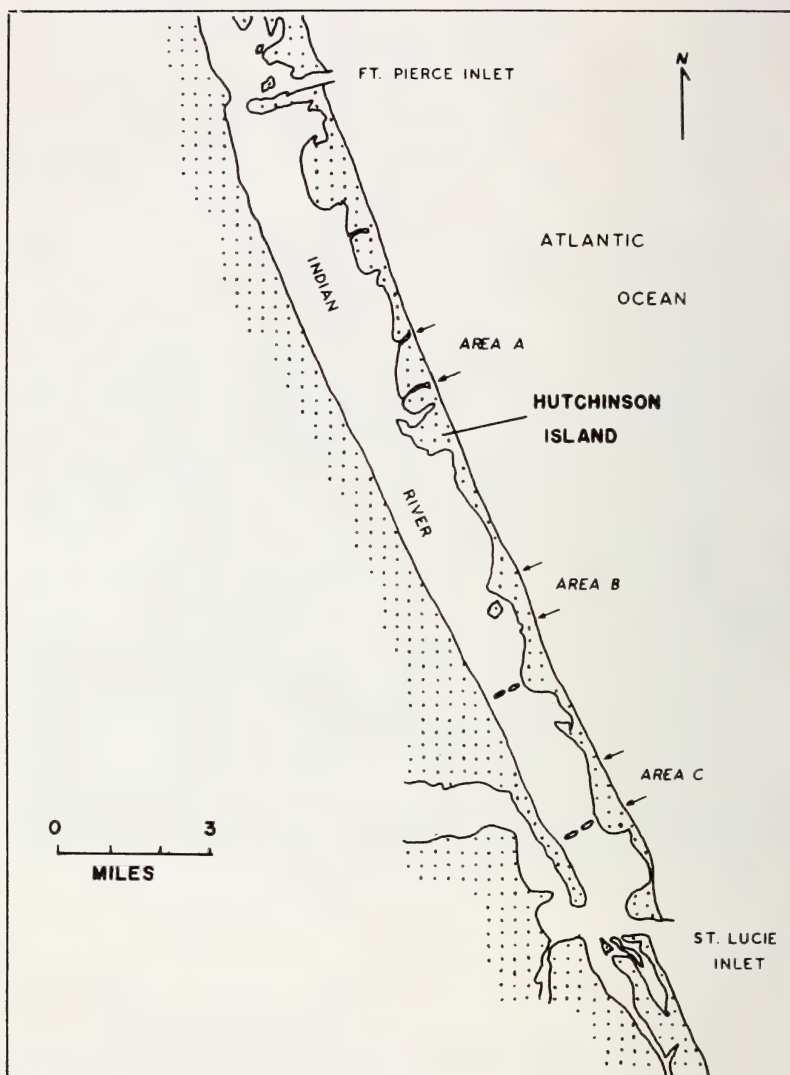


Fig. 2. Hutchinson Island, Florida, showing study areas.

Wednesday, and Friday of each week in May, June, July, and August of 1967. A beach buggy was used for transportation and was driven up each nest trail to count and mark the nest. The new nests in each area were counted as well as those disturbed by

raccoons. The moon phase and the position of the nest relative to the dune front were recorded. The dune front was defined as the seaward face of the dunes where erosion takes place during periods of extreme high tide.

RESULTS AND CONCLUSIONS

The turtles began nesting during the first week in May and continued through the last week in August. The peak of activity was reached during the last week in June, shortly after the summer solstice. Figure 3 illustrates that nesting activity appeared to



Fig. 3. Sea turtle nesting and nest predation.

be directly related to increasing and decreasing day length. The greatest nesting activity occurred in the last two weeks of June and the first two weeks of July. Nesting activity during the month of June was slightly higher than in July (Fig. 4).

The total number of nests which occurred in area A was found to be 209. The height of the dune front of area A ranged from 0 to 5 ft. Tall Australian pines, growing continuously along the beach behind the dune front, presented a high, dark skyline. Area B had a total of 308 nests. The dune front here averaged

0 to 3 ft. with a predominant vegetation of sea grapes which presented a lower and brighter skyline than area A. A total of 188 nests were observed in area C (Fig. 5). The height of the

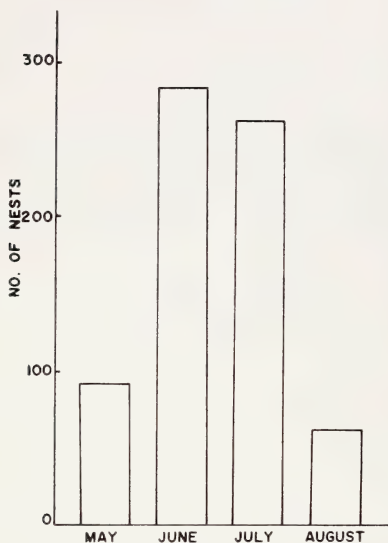


Fig. 4. Nesting by month.

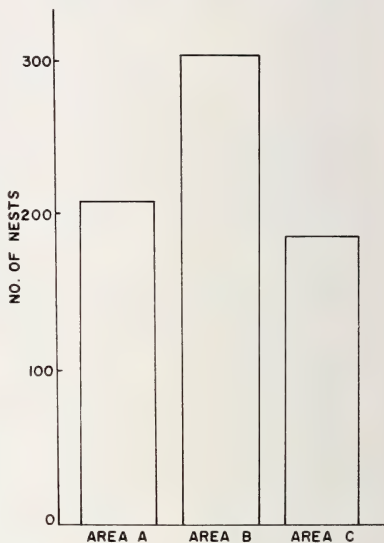


Fig. 5. Nesting by area.

dune front of this area ranged from 5 to 10 ft. The predominant sea grapes were considerably taller than those in area B and presented a high, dark skyline. The only discernible difference in the areas was the varying skyline and this may indicate that the turtles are attracted to a relatively bright beach on which to nest.

No apparent correlation between nesting activity and moon phase could be established.

A definite nest site preference relative to the dune front was noticed since 689 nests occurred below and 16 nests occurred above the dune front. It must be noted that in area A the dune front was apparently too high to permit any turtles to climb over it. The other areas have a lower dune front and the turtles were able to crawl over without apparent difficulty.

An effort was made to determine the total numbers of nests and eggs for the entire 22.4 mile beach on Hutchinson Island. Table 1 gives the results obtained by using the formula, estimated no.: no. counted: miles surveyed: miles of beach. Carr (1952)

lists an average of 120 to 130 eggs per nest for Atlantic loggerhead turtles. Since that species is the predominant one on the island, the egg number estimates were based on an average of 125 per nest.

Predation by raccoons was easily recognized from the egg shells scattered around the nest area (Fig. 6). During the month of



Fig. 6. A turtle nest destroyed by raccoons.

May, this predation was almost nonexistent since only one nest was destroyed in the study areas. In June, eight nests were destroyed and July had the greatest incidence of predation with 40 nests being damaged. August showed a decline with only six nests destroyed (Fig. 7). Area A had the greatest incidence of predation for the entire nesting season with 40 disturbed nests. Area B followed with 13 nests damaged and area C showed only two destroyed nests (Fig. 8).

As area A is the least used by fishermen and bathers, this might account for the heavy predation by raccoons. Area B is used more heavily and area C is used to the highest degree and

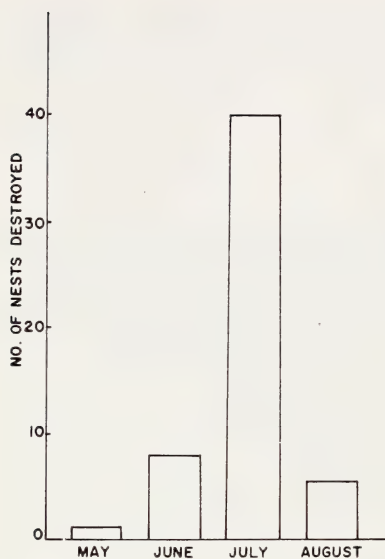


Fig. 7. Nest predation by month.

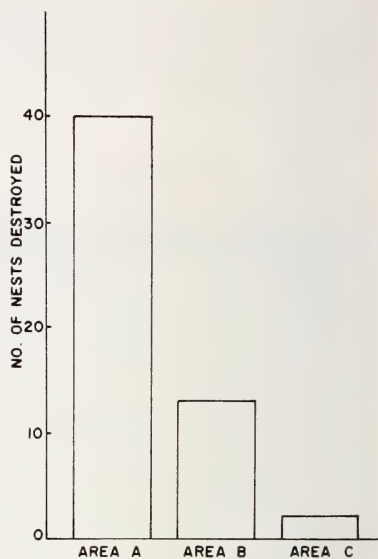


Fig. 8. Nest predation by area.

contains a public beach. The little-used areas probably have a higher raccoon population. The fact that predation did not occur to any great extent until July may reflect the possibility that the raccoons require some time to become oriented to the presence of the eggs on the beach. It is possible that animals other than raccoons are responsible for some of the predation but only the tracks of raccoons were seen around the nests examined. Some poaching was noticed outside of the study areas but this was kept to a minimum by conservation officers. Total predation was low since only 7.8 per cent of the counted nests were destroyed. It was also noted that the raccoons did not necessarily dig up only freshly made nests. Some of the nests were several days old when they were destroyed.

Several unusual nests were noticed during the course of this project. The largest nest of the loggerhead type was observed on May 12, with the tracks measuring 5 ft. 9 in. across. The smallest was found on July 12, with the tracks measuring 24 in. across. In area B, on May 22, an unusual nest was noted in that the flipper marks were much closer together on the tracks than is the case

with a loggerhead track. The nest area also contained a pit which is not characteristic of loggerhead nests. Another nest of this same type was found in area C on August 12, and both closely resembled Carr's (1952) description of a green turtle nest. A green turtle nest had been reported from this area (Carr and Ingle, 1959) and to determine if these nests might also be those of green turtles, the 74 eggs from the August 12 nest were dug up and reburied in an enclosure. The first of the eggs hatched after 71 days and verified the tentative identification. If the earlier nest was also that of a green turtle, it can be estimated that approximately 15 green turtles nested along the entire length of Hutchinson Island. The validity of this estimate is enhanced by the observation of several of these green turtle nests outside the study areas.

TABLE 1
Estimates for sea turtle nests and eggs

	May	June	July	August	Total
Total nests counted ^a	94	285	262	64	705
Destroyed nests counted	1	8	40	6	55
Estimated nests ^b	702	2,128	1,957	478	5,265
Estimated eggs	87,750	266,000	244,625	59,750	658,125
Estimated nests destroyed	8	60	299	45	412
Estimated eggs destroyed	1,000	7,500	37,375	5,625	51,500

^a Total counted in 3 miles of beach.

^b Estimated for 22.4 miles of beach.

SUMMARY

An estimated 5,265 nests containing about 658,125 eggs occurred on Hutchinson Island from May through August, 1967. Through similar projection of the sample data, a total of 51,500 eggs were believed to have been destroyed by raccoons (7.8 per cent). Peak nesting activity occurred during the last week of June. The nesting turtles appeared to prefer a relatively bright beach. No significant relationship between nesting activity and moon phases was found. Most of the nests occurred below the dune face and only a few turtles climbed over the dunes. Significantly, two green turtle nests were found in the study areas and an estimated 15 green turtles probably nested on Hutchinson Island.

LITERATURE CITED

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- CARR, ARCHIE, AND ROBERT M. INGLE. 1959. The green turtle (*Chelonia mydas mydas*) in Florida. Bull. Mar. Sci. Gulf & Carib., vol. 9, no. 3, pp. 315-320.

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